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Figure 1. (SEQ ID NO: 1)

CCCGGTCGGAGGTTCAAGGAATGACTAGATGTGGCACTTAGTGCCATGGCTAGTTGAC	60
AAGGTGATGGTGGTCAAAAGTTGGACTCGATGATCTCAGAGTTTTTCCAGCCTTAAT	120
AATTCTATGAATTCTGTAATTATTCTTGATCTTTGAGCGAAGTTGTTGGGATT	180
TTAGTTGGTTCCCTGTCACTGTTTCTTCCTTGAAACTGACTTCATTGCAACATG	240
AGAATTGCTGTATTGTCAGGTTACAAGTAGTGCAATGGCTGCTTAGAAGTAGTGAGAAA	300
CATTTAGGGAAATACTGGAGTGAAAGCAAACACAGTGGTACTGCCAAACTGTAGCTTGGG	360
ATTTGAGGAGCCACAGAGTTGATATAAATTGTTAATGATATCCTGCCCTGCCCTCC	420
ATTAATTGCTGTTTATGAAACCACTCTTTTTTTTTTTGGCTCTTCA	480
TATCCTGTTGTAATGAGTTAATGCATTTAGAACATGGCAGAACACTAGGAGATCTGTGG	540
ATGACAGTGGTACAGGAGCTCTGAATTTTAGATAAAACTATGAGAGTGAAACAGAAAT	600
CTGAGGCTAGTTCTTGAGCTGACTGTAAATTGTGAGAATATTCAGACTACATTA	660
GTTGTGTGTTGAGGAAAAATAAAATGTTAAGTTGTCCATTCCCTGAAACCTCCGACC	720
GGG	723



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Figure 2.

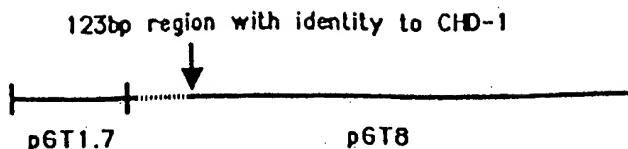


Figure 3.

M	CHD-1	ATTCTTCCAG ATGATCCTGA TAAAAAAACCA CAAGCAAAAC AGTTACAGAC	(SEQ ID NO: 2)
C	CHD-1A	ATTTTACCTG ATGATCCAGA CAAGAAACCC CAGGCAAAGC AGCTACAGAC	(SEQ ID NO: 3)
C	CHD-W	ATTTTACCTG ATGATCCAGA TAAGAAACCC CAGGCTAAGC AGTTACAGAC	(SEQ ID NO: 4)
GT	CHD-W	ATTTTACCTG ATGACCCAGA TAAGAAACCA CAGGCAAAGC AGTTGCAGAC	(SEQ ID NO: 5)

M	CHD-1	CAAAAAACCA CAAGCAAAAC AGTTACAGAC CCGTGCAGAC TACCTCATCA	
C	CHD-1A	CAAGAAACCC CAGGCAAAGC AGCTACAGAC CCGTGCAGAC TACCTCATTA	
C	CHD-W	CAAGAAACCC CAGGCTAAGC AGTTACAGAC CCGTGCAGAT TACCTCATTA	
GT	CHD-W	CAAGAAACCA CAGGCAAAGC AGTTGCAGAC CCGTGCAGAT TACCTCATTA	

M	CHD-1	AACTACTTAG CAGAGATCTT GCAAAAAGAG AGGCTCAGAG ACTTTGTGGT GCG	
C	CHD-1A	AATTACTGAA TAAAGACCTT GCAAGAAAGG AAGCACAAAG GCTTGCTGGT GCA	
C	CHD-W	AATTACTGAA TAAAGACCTT GCAAGAAAGG AAGCACAGAG ACTTGCTGGT GCA	
GT	CHD-W	AATTACTGAA TAAAGACCTT GCAAGAAAAG AAGTGCAGAG ACTTACTGGT GCA	

M	CHD-1	ILPDDPDKKPQAKQLQTRADYLIKLLSRDLAKREAQRLCGA	(SEQ ID NO: 6)
C	CHD-1A	ILPDDPDKKPQAKQLQTRADYLIKLLNKDLARKEAQRLLAGA	(SEQ ID NO: 7)
C	CHD-W	ILPDDPDKKPQAKQLQTRADYLIKLLNKDLARKEAQRLLAGA	(SEQ ID NO: 8)
GT	CHD-W	ILPDDPDKKPQAKQLQTRADYLIKLLNKDLARKEVQRLLTGA	(SEQ ID NO: 9)

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Figure 5.

(SEQ ID NO: 10).

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1 CGGGCTGCGG CACGAAGCGC ACCGGCCGGG CACGCAGGCT CGGGCCGGGG  
 51 AAGGCCTGGC CCGCCGAGCC GGACGCACGC AGGTATTG GCAAAATCT  
 101 TGGCCATCTG TAGAGAATAG CAAGTCAAAC GCATTAATTC GAAAACATAC  
 151 GGAGTACCAAG AAAGGGGATT CTTGACCTAC ACCTTGTAAAC CTGAGTGGAC  
 201 TTTCTTTTTA ACTTCTTAAT ACTTACAATG AATGGGCACA GTGATGAAGA  
 251 AAGTGTAAAG AACAGCAGTG GAGAGTCAG CAGATCAGAT GATGATTCTG  
 301 GGTCAAGCTTC AGGTTCTGGA TCTGGTCAA GCTCTGGAAG CAGTAGCGAT  
 351 GGAAGTAGCA GCCAGTCAGG TAGCAGTGCAC TCTGAATCTG GTTCAGAGTC  
 401 AGGCAGTCAA TCCGAATCAG AGTCTGACAC ATCTAGAGAG AAGAAACAAG  
 451 TTCAAGCTAA ACCTCCGAAA GCTGACGGAT CTGAGTTTG GAAGTCCAGT  
 501 CCAAGCATAAC TTGCTGTACA GAGATCAGCA GTGCTCAAGA AGCAACAGCA  
 551 ACAGCAAAA GCAGCATACT CAGACAGTGG TTCAGAAGAG GACTCATCCA  
 601 GTAGTGAAGA TTCTGCCGAT GATTGTCCTA GTGAAACTAA GAAGAAAAAG  
 651 CATAAAAGATG AAGACTGGCA AATGTCAGGG TCAGGGTCAG TATCAGGAAC  
 701 TGGTTCTGAT TCTGAATCGG CGGAAGATGG GGATAAAAGC AGTTGTGAAG  
 751 AAAGTGAATC TGACTATGAG CCAAAAAACA AAGTCAAAG CCGTAAACCT  
 801 CCAAGCAGAA TTAAGCCAAA AAGTGGAAA AAGAGCACAG GACAGAAGAA  
 851 GAGGCAACTT GATTCATCAG AGGAGGAGGA GGACGATGAT GAAGATTATG  
 901 ATAAGAGAGG ATCTCGTCGC CAGGCAACAG TGAATGTTAG TTACAAAGAA  
 951 GCTGAAGAAA CCAAGACAGA TTCTGATGAT TTGCTGGAAG TTTGTGGAGA  
 1001 GGATGTCCCA CAGACTGAAG AAGATGAATT TGAAACTATA GAGAAGTTTA  
 1051 TGGACAGTCG ATTGGCCCA AAAGGAGCCA CTGGTGCCTC AACCAACCATC  
 1101 TATGCCGTTG AGGCAGATGG TGACCCAAT CCTGGGTTTG AAAAGTCAAA  
 1151 GGAGCTGGGA GAAATACAGT ATCTTATTA ATGGAAAGGC TGGTCACACA  
 1201 TCCATAACAC TTGGGAAACT GAAGAACGC TGAAGCAACA AAATGTTAAA  
 1251 GGAATGAACA AACTGGACAA CTACAGAAA AAGGATCAGG AGACAAAACG  
 1301 CTGGCTGAAA AATGCTTC CAGAAGATGT GGAATATTAT AACTGCCAGC  
 1351 AGGAGCTTAC AGATGATCTG CACAAACAAT ATCAAATAGT GGAAAGAATA  
 1401 ATTGCTCATT CAAATCAAAA GTCAGCAGCT GGTTATCCGG ACTACTATTG  
 1451 CAAATGGCAG GGTCTGCCCT ACTCAGAATG TAGCTGGAA GATGGTGCTC  
 1501 TCATTGCCAA AAAGTTTCAG GCACGCATTG ATGAGTATT TAGCAGAAAT  
 1551 CAATCCAAGA CTACTCCCT TAAGGACTGC AAGGTTCTAA AACAGAGACC  
 1601 AAGATTGTT GCACTGAAGA AGCAACCAC TTACATTGGA GGACATGAAA  
 1651 GTCTGGAGTT AAGAGATTAT CAGTTAAATG GATTGAATTG GCTCGCTCAT  
 1701 TCATGGTGC AAGGAAATAG TGTTATTCTT GCAGATGAAA TGGGTCTGGG  
 1751 TAAAACAATA CAAACAATT CTTTCTGAA CTACCTGTT CATGAACATC  
 1801 AACTGTATGG CCCTTTCTT CTGCCGTGC CACTTCTAC CTTGACATCT  
 1851 TGGCAAAGAG AGATTCAAAC TTGGGCTCCT CAGATGAATG CTGTAGTTA  
 1901 CTTAGGAGAT ATAACTAGTA GAAATATGAT AAGGACTCAT GAATGGATGC  
 1951 ATCCACAGAC TAAACGATTA AAGTTAACAA TACTTCTGAC GACATATGAA  
 2001 ATTTACTGA AGGATAAGTC ATTCCCTGGT GGTCTCAATT GGGCATTCT  
 2051 AGGAGTTGAT GAAGCTCATC GTTTAAAAAA TGATGACTCT CTTCTGTACA  
 2101 GGACCTTAAT AGACTTTAAG TCCAACCAC GACTTCTGAT TACTGGAACC  
 2151 CCACTGCAAA ATTCCCTCAA AGAGCTGTGG TCTTTGTTGC ATTCATCAT  
 2201 GCCAGAAAAA TTTCCCTCCTT GGGAAAGATT TGAGAGGAGG CATGGCAAAG  
 2251 GAAGAGAGTA TGGTTATGCA AGTCTCACA AAGAGCTTGA ACCATTCTT  
 2301 CTAAGAAGAG TAAAAAAGA TGAGGAAAG TCTTACCTG CTAAGGTTGA  
 2351 ACAAACTCTG AGGATGGAAA TGAGTGCATT GCAGAAGCAA TATTACAAGT  
 2401 GGATTTAAC AAGGAATTAT AAAGCCTCA GTAAAGGTT AAAAGCCAGT  
 2451 ACCTCAGGCT TTCTGAACAT TATGATGGAA CTTAAGAAGT GTTGTAAACCA  
 2501 TTGCTACCTC ATTAAGCCAC CAGATGATAA TGAAATTCTAT AATAAACAGG  
 2551 AGGCCTTACA GCATTTGATA CGTAGCAGCG GGAAACTAAT CCTTCTGAC  
 2601 AAGCTACTGA TTGCTCTGCG AGAACGTGGC AACAGAGTT TGATTTCTC  
 2651 TCAAGATGGTGC AGGATGCTGG ACATCCTAGC AGAATATCTG AAGTATGCC  
 2701 AGTTCCCTT CCAGAGACTT GATGGATCAA TAAAAGGGAA ATTGAGGAAG  
 2751 CAAGCACTGG ATCATTCTCAA TGCAGAAGGA TCAGAGGATT TCTGTTTTT  
 2801 ACTGTCTACA AGAGCTGGAG GATTAGGTAT TAACTTGGCA TCTGCTGACA  
 2851 CTGTAGTTAT TTTTGATTCT GACTGGAATC CACAGAATGA TCTGCAGGCA  
 2901 CAGGGAGAG CTCATAGAAT TGGCACAGAAG AACACAGGTTA ATATTTATCG  
 2951 GCTAGTCACA AAAGGATCAG TAGAAGAAGA TATTCTGAA AGAGCCAAGA



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3001 AGAAGATGGT GCTAGACCAT TTGTAATTG AGAGAATGGA CACGACAGGA  
 3051 AAAACTGTC TGCATACAGG TCAACTCCA TCAAGCTCTA CACCTTTAA  
 3101 TAAAGAAGAG TTATCAGCTA TTTGAGGTT TGGTGTGAG GAACTCTTA  
 3151 AAGAACCTGA AGGAGAAGAA CAGGAGCCCC AGGAAATGGA TATAGATGAA  
 3201 ATCTTGAAGA GAGCTGAAAC TCGGGAAAAT GAGCCAGGTC CATTGACTGT  
 3251 AGGGGATGAG TTGTTTCAAC AGTTCAAGGT GGCAGACTTT TCCAATATGG  
 3301 ATGAAGATGA TATTGAGTTG GAACAGAAA GAAATTCAAG AAATTGGAA  
 3351 GAAATCATCC CAGAATCCCA ACGGAGAAGG ATAGAGGAGG AGGAAAGACA  
 3401 AAAAGAACTT GAAGAAATAT ACATGCTCCC GAGGATGAGA AACTGTGCAA  
 3451 AACAGATCAG CTTTAATGGG AGTGAAGGAA GAGCAGTAG GAGCAGAAGA  
 3501 TATTCTGGAT CTGATAGTGA CTTCCATCACA GAAAGAAAAC GGCACAAAAAA  
 3551 GCGTGGAAAGA CCTCGAACCA TTCTCGAGA AAATATTTAA GGATTTAGTG  
 3601 ATGCAGAGAT CAGGCGGTTT ATCAAGAGTT ACAAGAAATT TGGTGGCCCT  
 3651 CTGGAAAGGT TAGATGCTGT AGCTAGAGAT GCTGAACCTGG TTGATAAATC  
 3701 TGAGACAGAC CTTAGACGTT TGGGTGAACG TGTACATAAT GGATGCATTA  
 3751 AGGCTTTAAA GGACAATTCA TCTGGACAAAG AAAGAGCAGG AGGTAGACTT  
 3801 GGGAAAGTTA AAGGCCAAC GTTTCGAATC TCAGGAGTGC AGGTGAATGC  
 3851 AAAACTAGTC ATCTCTCACG AAGAAGAGCT GGCACCACTG CACAAATCCA  
 3901 TCCCTTCAGA TCCAGAAGAA AGGAAAAGAT ATGTCATCCC ATGCCACACC  
 3951 AAGGCTGCTC ACTTCGATAT AGATTGGGT AAAGAAGATG ATTCAATCT  
 4001 GTTAGTAGGC ATCTATGAAT ATGGCTATGG CAGCTGGAA ATGATAAAA  
 4051 TGGATCCAGA TCTCAGCTTA ACACAGAAGA TTTTACCTGA TGATCCAGAC  
 4101 AAGAAACCCC AGGCAAGAGA GCTACAGACG CGTGCAGACT ACCTCATTAA  
 4151 ATTACTGAAT AAAGACCTTG CAAGAAAGGA AGCACAAAGG CTTGCTGGTG  
 4201 CAGGCAATTG CAAGAGAAGG AAGACAAGAA ATAAGAAGAA TAAGATGAAG  
 4251 GCTTCAAAAA TAAAAGAAGA AATAAAAGAT GATTCTTCAC CACAAACCTC  
 4301 AGAAAATCT GATGAAGATG ATGAGGAGGA GGATAACAAG GTAAATGAAA  
 \* \* \*  
 4351 TGAAATCTGA AAATAAAGAA AAATCTAAAA AAATTCATT GCTGGATACT  
 4401 CCAGTTCATC TTACTGCAAC CAGTGAACCA GTTCCATTCT CAGAAGAAC  
 4451 TGAAGAACTC CATCAGAAGA CATTAGTGT GTGCAAGAGA AGAATGAGGC  
 4501 CTGTCAAAGC AGCAGTAAA CAGCTGGATA GACCAGAGA GGGCTTTCT  
 4551 GAAAGGGAGC AGCTGGAACA TACTAGGCAG TGTCTAATCA AAATTGGGA  
 4601 TCACATTACA GAATGCCGTGA AGGAGTACAC AAATCCCGAG CAAATAAAC  
 4651 AGTGGAGGAA AAATTGTGG ATTTCCTGT CCAAGTTTAC AGAATTGAT  
 4701 GCCAGAAAGC TGCAAAACT CTACAAACAT GCAATCAAAA AGGCCAAGA  
 4751 GTCTCAGCAA CACAATGACC AAAACATTAG CAGCAATGTG AATACACATG  
 4801 TAATCAGAAA TCCAGATGTG GAAAGACTGA AGGAGACTAC AAACCATGAT  
 4851 GATAGTAGCA GGGACAGTTA TTCTTCTGT AGACATTAT CACAATACCA  
 4901 TGATCATCAC AAAGACAGGC ATCAGGGAGA TGCTTACAAG AAAAGTACT  
 4951 CCAGGAAAG GCCATATTCA GCCTTCAGTA ATGGAAAAGA TCACAGAGAC  
 5001 TGGGATCACT ACAAAACAGGA CAGCAGATAC TACAGTGATA GTAAACATAG  
 5051 AAAGTTAGAT GACCACAGGA GCAGAGACCA CAGGTCAAAC CTGGAAGGAA  
 5101 ACTTTAAAGA CAGCCGGGGT CATTCAAGATC ACCGCTCCCA TTCAAGACCAC  
 5151 AGGATACACT CAGATCACCG TTCCACTTCA GAATACAGCC ATCATAAATC  
 5201 TTGAGAGAT TATAGATACC ACTCAGACTG GCAAATGGAC CACAGAGCTT  
 5251 CTGGTAGTGG CCCGAGGTCA CCACTAGATC AGAGGTCTCC TTATGGTTCA  
 5301 AGATCTCCC TAGGACACAG ATCTCCATTG GAACACTCAT CAGATCACAA  
 5351 AAGTACACCT GAACATACAT GGAGTAGCCG GAAGACATAA CAAAGACTGA  
 5401 CATTTCCTGG ACCTTCTTT TAGCCATATA CAGTAAACTA ACACAGTAAT  
 5451 TGCCTTACAT GACTTGAAAG ATATGGACTG GATATTCTAT CAGTAGCAGT  
 5501 ATTGTTACTT CTTTCAGGA TGCAAGGTCT ATTATCCAA CAGAAGAAAA  
 5551 ATATTTTGT ATTTAAAGT TATGCTGCAC TGTGCTGCAA ATGTTGTGGC  
 5601 ACTTTTTTT TAAGAAATGG AAGATGTTA CTTTCAAGG GACCTCAACA  
 5651 CTGCCCCCTT CAGACTGGAT CTACTATAA AACTCTCAT GTCAAAGTGG  
 5701 TTCTAGGCTG AACACAGATT AAATTATGTT TGTAAATGAA CACTTAAACA  
 5751 CTGACCTGTG CTTATGTTT AGGAAAAGAAT GGGGGATTAA TTTGTTTTA  
 5801 TTTCTGGTA GAGAACCTCTC AAGGACTTTG TTCACTTCC AAAGCTACTT  
 5851 GTTTACATTG TACACTGCGA CCACCTGCC GCTTTCTATC ACAAGCTTGA  
 5901 ATATTTAAAT TCTGTACCTA CAGTTGAAA ATAGCCAGGA TTTCTCCTGT  
 5951 TTGTGATCAG TTATAATGCC TTTTTATGAA ACAACAAAC AAACAAAAAA  
 6001 CAATTAAAAA AAAAAACACA ACAAAACCAA CAAATGGCTG TAAATTATTG  
 6051 TAAATTAAAT AAATGAGCTT TTTCCGTCA GGCTTTTTT GGCTGTTCCCT  
 6101 TTCCCCAACAA ACTCAGGCC TCTTTCAAC AAGTCAGTAT ACTTACATGT  
 6151 TTTAATAAAA TATCTCGATG GAATCAGAAT GTAAAAATGG GGAAGGGAAT  
 6201 ATTTTATTC CTTTGTGCT CTTTTTTTAT TGGATACCTT TACATACCTG  
 6251 TTTTGGTTG TTTTATTTTA TTTTTTTTCTTAAACT GTCAAGTGTG  
 6301 TGATTGTTG AATGAAACAGT GAGAATATCC CACTCTAAC TGTGCCCTGG  
 6351 AAAGCTTTTC AGGTGCATTG GTTAAAAGA AGGAAGTGTGTT CTATAGGTGA



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6401 ACACTTCAAA ACCCAGATCA GCCAAGATTC ATTGTAAATC CATTGTTTT  
6451 CCCTCTTAA CATGGGCAAT AATGTCAAAT GTGCTATGCA GCAGTTAATA  
6501 TTTTAGAAGA TTTGAATGAC TTTATTAACA GAATTGTTAC AATGCACACT  
6551 GATTGTACAT AGATAACTTC TATCTGACAA ATTAAATTAA CTAAAACCAA  
6601 AAAAAACC



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Figure 6.

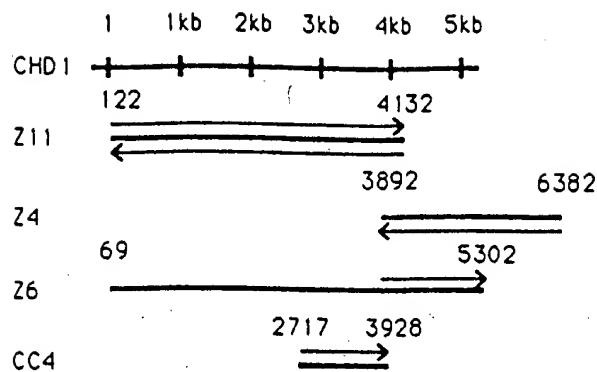


Figure 7.

CHD-1A 1 D E I V S V K B L H K K I K T E (SEQ ID NO: 11)  
 CHD-W 1 GATGAGATTGTTCACTGAAACATCTACATAAAAAAATAAAAACAGAAA (SEQ ID NO: 12)  
 CHD-1A 51 K E N E E K P E P D I G I K K E A  
 CHD-W 51 AAAGAAAATGAAGAAAAGCCTGAGCCAGATATTGGTATAAAAGAAGGAAGCT  
 CHD-1A 101 E E K R E T K E K E N K R E L K R  
 CHD-W 101 GAAGAAAAAGAGAGACAAAAGAGAAGGAAAATAAGGGATTGAAAAGG  
 CHD-1A 151 GAGAAAAAGAAAAGAGGATAAGAAGAATTAAAAGAAAAGATAATAAA  
 CHD-1A 201 E K R E N K V K E S T Q K E K E V  
 CHD-W 201 GAAAAGAGAGAAAACAAAGTAAAAGAATCCACACAGAAAAGAAAAGAAGTG  
 CHD-1A 251 K E E K  
 CHD-W 251 AAGGAAGAGAAG



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Figure 8. (SEQ ID NO: 15)

ATTTATCGC	TAGTCACAAA	AGGATCACTA	GAAGAAGATA	TTCTTGAAAG	AGCCAAGAAA	AAGATGGTGT	TAGATCATTT
10	20	30	40	50	60	70	80
ACTGATTCA	AGAATGGACA	CCACAGGGAA	AACTGTACTA	CATACAGGCT	CTACTCCCTTC	AAGCTCAACAA	CCTTTTAATA
90	100	110	120	130	140	150	160
AGGAAGAGTT	ATCAGCAATT	TTGAAGTTTG	GTGCTGAGGA	ACTTTTTAAA	GAACCTGAAN	NNGAAGAAGA	GGAGCCTCAG
170	180	190	200	210	220	230	240
GAGATGGATA	TAGATGAAAT	CCTGAAGAAG	NCTGAAACTC	GAGAAAATGA	GTCAGGCCCCA	TTAACTGTAG	GAGATGAGTT
250	260	270	280	290	300	310	320
ACTTTACAG	TTCAAGGTA	CTAACTTTTC	CAATATGGAT	GAAGATGACA	TTGAATTGGA	ACCAGAACAA	AATCTAAGAA
330	340	350	360	370	380	390	400
ACTGGGAAGA	AATCATTCGA	GAAGTTCACT	GGCGAOGAAT	AGAGGGGNNG	GAAGACACAA	AAGAACATTGA	AGAAATATAT
410	420	430	440	450	460	470	480
ATGCTTCCAA	GAATGAGAAA	CTGTGCAAAA	CAGATCAGCT	TTAATGGAAA	TGAAGGGAGA	TGCACTAGGA	GCAGAAGATA
490	500	510	520	530	540	550	560
TTCGGATCT	GATAGTGATT	CCATCTCGA	AAGAAAACGA	CCAAAAAAAC	GTGGACGACC	ACCGAACTTATT	CCCCGTGAAA
570	580	590	600	610	620	630	640
ACATTAAGG	ATTTAGTGT	GCAGAGATTA	GACGATTAT	CAAGAGTTAC	AAGAAAATTTG	GTGGCCCAAGT	TGAAAGGTTA
650	660	670	680	690	700	710	720
GATGCTATAG	CTAGAGATGC	TGAGCTAGTT	GATAAACTG	AAACAGACCT	TAGACGTCTG	GGAGAACTTG	TACATAATGG
730	740	750	760	770	780	790	800
ATGCATTAAG	GCTTTAAATG	ATAATGACTT	TGGTCAAGGA	AGAACAGGTG	GTAGATTTGG	GAAGTTAAA	GGCCCAACAT
810	820	830	840	850	860	870	880
TCCGAATAGC	AGGAGTGCAG	GTGAATGCAA	AGCTAGTCAT	TTCTCACGAA	GAAGAGTTGG	CACCATGCA	AAATCGATT
890	900	910	920	930	940	950	960
CCTTCAGATC	CAGAAGAAG	GAAGAGATAT	GTCACTCCAT	ACCCACCCAA	ACCAAGCTCAT	TTTGATATAG	ATTGGGTAA
970	980	990	1000	1010	1020	1030	1040
AGAAGATGAT	TCCAATCTGT	TAATAGGCAT	CTATGAATAT	GGTTATGGCA	GTTGGGAAT	GATAAAAATG	GATCCTGATC
1050	1060	1070	1080	1090	1100	1110	1120
TCAGTTGAC	ACAGAAGATT	TTACCTGATG	ATCCAGATAA	GAACACCCAG	GCTAAGCACT	TACAGACTCG	TCCAGATTAC
1130	1140	1150	1160	1170	1180	1190	1200
CTCATTAAAT	TACTGAATAA	AGACCTTCGA	AGAAAGGAAG	CACAGAGACT	TGCTGGTCA	GGCAATTCAA	AGAGGAGAAA
1210	1220	1230	1240	1250	1260	1270	1280
AAACAAGAAGT	AAGAAGATAA	AAGCAACAAA	GGCTGC				
1290	1300	1310					



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Figure 9.

C CBD-1A  
M CBD-1

DARRYLGKNLGHL\*RIASQTHYFENIRSTRKGILDLELVT\*VDFLFNPLLLTNGHSDEE (SEQ ID NO: 16)  
FALCPFTQREPQEERCRKTFIEILIFEICIHLLIGDPCFINLIFTNGHSDEE (SEQ ID NO: 17)  
\*\*\*\*\*

C CBD-1A  
M CBD-1

SVRNSSGESSRSDDSAGSAGSGSGSSGSSDGSSSQGSSDSESGSESGSQSESESD  
SVRNSSGESSQSGDD-CGSAGSGSGSSGSSDGSSSQGSSDSDGSDSGSQSESESD  
\*\*\*\*\*

C CBD-1A  
M CBD-1

TSREKKQVQAKPPKADGSEFWKSSPSILAVQRSAVLJKQOOO---QKAASSDSGSEEDSS  
TSRENK-VQAKPPKVDGAZFWKSSPSILAVQRSAMLRKQPOQQAQOORPASSNSGSEEDSS  
\*\*\*\*\*

C CBD-1A  
M CBD-1

SSEDSADDSSSETKKKKERDEDWQMSGSGSVSGTGSDESSEAEDGDKSCEEZSDYEPKN  
SSEDS-DDSSSGAKRKKEDEDWQMSGSGSPSQLGSDSEZERDKSSCDGTSDYEPKN  
\*\*\*\*\*

C CBD-1A  
M CBD-1

KVKSRAKPPSRIKPKSGKKSTGQKKRQLDSSEEEDDDEDYDKRGSRRQATVNVSYKEAZZ  
KVRSAKPKQNRSKNGKKILQKKRQIDSSEEDDDEDYDNDKRSRRQATVNVSYKEDEE  
\*\*\*\*\*

C CBD-1A  
M CBD-1

TKTDSDLLEVCGEDVPQTEDEFETIEKFMDSRIGRKGATGASTTIYAVEADGDPNAGF  
MKTDSLLEVCGEDVPQPEDEFETIERVMDCRVGRKGATGATTIYAVEADGDPNAGF  
\*\*\*\*\*

C CBD-1A  
M CBD-1

KTKZPGEIQYLIKWKGSWHSIENTWETEETLQONURGMKLDNYKKKDQEETKRWLKNAS  
EKSKEZGEIQYLIKWKGSWHSIENTWETEETLQONURGMKLDNYKKKDQEETKRWLKNAS  
ERNKEPSDIOYLIKWKGSWHSIENTWETEETLQONURGMKLDNYKKKDQEETKRWLKNAS  
\*\*\*\*\*

HUMAN  
C CBD-1A  
M CBD-1

PEDVEYYNCQQELETDDLEHKQYQIVERTNXPQSKAAGYP (SEQ ID NO: 18)  
PEDVEYYNCQQELETDDLEHKQYQIVERILAEHSNQSKAAGYPDYCKWQGLPYSECSDWEGA  
PEDVEYYNCQQELETDDLEHKQYQIVERILAEHSNQSKAAGLPDYCKWQGLPYSECSDWEGA  
\*\*\*\*\*

C CBD-1A  
M CBD-1

LIAKKQARIDEYFSRNMQSKTTPFKDCVKLQPRFVALKKOPSYIGHZSLELRDYQLN  
LISKKKQTCIDEYFSRNMQSKTTPFKDCVKLQPRFVALKKOPSYIGHZGLELRDYQLN  
\*\*\*\*\*

C CBD-1A  
M CBD-1

GLNWLAESWCKGNSCILADEMGLGKTIQTISFLNYLPHZBQLYGPFLRVPLSTLTWSQR  
GLNWLAESWCKGNSCILADEMGLGKTIQTISFLNYLPHZBQLYGPFLRVPLSTLTWSQR  
\*\*\*\*\*

C CBD-1A  
M CBD-1

EIQTWAPQMNAAVYLGDIITSRNMIRTHEWMPQTKRLKFNILLTTYEILLKDKSFLGGLN  
EIQTWAPQMNAAVYLGDIITSRNMIRTHEWMPQTKRLKFNILLTTYEILLKDKAFLGGLN  
\*\*\*\*\*

C CBD-1A  
M CBD-1

WAFIGVDEAHLKNDDSLLYRTLIDFKSNHERLLITGTPLQNSLKEWLSSLEPIMPEKFSS  
WAFIGVDEAHLKNDDSLLYRTLIDFKSNHERLLITGTPLQNSLKEWLSSLEPIMPEKFSS  
\*\*\*\*\*

C CBD-1A  
M CBD-1

WEDFEZEHGKGREYGYASLKELEPFLRRVKDKVEKSLPAKVEQILRMEMSALQKQYYK  
WEDFEZEHGKGREYGYASLKELEPFLRRVKDKVEKSLPAKVEQILRMEMSALQKQYYK  
\*\*\*\*\*

C CBD-1A  
M CBD-1

WILTRNYKALSKGSRGSTSGPLNIMMELAKCCNHCYLIKPPDDNEFYNKQEAQHLIRSS  
WILTRNYKALSKGSRGSTSGPLNIMMELAKCCNHCYLIKPPDDNEFYNKQEAQHLIRSS  
\*\*\*\*\*

C CBD-1A  
M CBD-1

GKLILLDKLILRLRERGNRVLIFSQMVRMLDILAELKYRQPPQRLDGSIKGELRQAL  
GKLILLDKLILRLRERGNRVLIFSQMVRMLDILAELKYRQPPQRLDGSIKGELRQAL  
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C CBD-1A  
M CBD-1

DEFNAEGSEDFCFLSTRAGGLGINLASADTVVIFDSDNPQNDLQAQARAERIGQKKQV  
DEFNAEGSEDFCFLSTRAGGLGINLASADTVVIFDSDNPQNDLQAQARAERIGQKKQV  
\*\*\*\*\*

C CBD-W  
C CBD-1A  
M CBD-1

-IYRLVTKGSVEEDILERAKKKVLDLHVORMDITGKTVLHTGSTPSSSTPPNKEELSA  
NIYRLVTKGSVEEDILERAKKKVLDLHVORMDITGKTVLHTGSTPSSSTPPNKEELSA  
NIYRLVTKGSVEEDILERAKKKVLDLHVORMDITGKTVLHTGSTPSSSTPPNKEELSA  
\*\*\*\*\*

(SEQ ID NO: 19)

C CBD-W  
C CBD-1A  
M CBD-1

ILKFGAEELFKEPEXEPEEEQPEMDIDEILKRAETRENESGPLTVGDELLSQFKVANTSNM  
ILKFGAEELFKEPEGEQPEMDIDEILKRAETRENEGPGLSVGDELLSQFKVANTSNM  
ILKFGAEELFKEPEGEQPEMDIDEILKRAETRENEGPGLTVGDELLSQFKVANTSNM  
\*\*\*\*\*

C CBD-W  
C CBD-1A  
M CBD-1

DEDDIELEPEQNLRNWEIIPFVQWRRRIEGXERQKELEEYMLPRMRNCARDISPNCNEG  
DEDDIELEPERNSRNWEIIPFQRRRLEEEQKELEEYMLPRMRNCARDISPNGSEG  
DEDDIELEPERNSRNWEIIPFQRRRLEEEQKELEEYMLPRMRNCARDISPNGSEG  
\*\*\*\*\*

C CBD-W  
C CBD-1A  
M CBD-1

RCSRSPRRSGSDSISERKPKRGRPRTIPRENIKGFSDAEIRRFLKSYKKPGGVER  
RRSRSPRRSGSDSISERKPKRGRPRTIPRENIKGFSDAEIRRFLKSYKKPGGVER  
RRSRSPRRSGSDSISERKPKRGRPRTIPRENIKGFSDAEIRRFLKSYKKPGGVER  
\*\*\*\*\*

C CBD-W  
C CBD-1A  
M CBD-1

LDAIARDAAELVDKSETDLRRLGELEVNGCIALNDNDFOQGRTOGRPGVKGPTRLAGV  
LDAIARDAAELVDKSETDLRRLGELEVNGCIALNDNDFOQGRTOGRPGVKGPTRLAGV  
LDAVARDAELVDKSETDLRRLGELEVNGCIALNDNDFOQGRTOGRPGVKGPTRLAGV  
\*\*\*\*\*

C CBD-W  
C CBD-1A  
M CBD-1

QVNAKLVISHEELAPLEKSI PSDPEERKRYVIPYHFTKAHHFDIDWGRKEDDSNLLIGIYE  
QVNAKLVIAHEDELAPLEKSI PSDPEERKQYTIPCHFTKAHHFDIDWGRKEDDSNLLIGIYE  
QVNAKLVISHEELAPLEKSI PSDPEERKRYVIPCHFTKAHHFDIDWGRKEDDSNLLVGVIYE  
\*\*\*\*\*

C CBD-W  
C CBD-1A  
M CBD-1

YGYGSWEMIKMDPDLSTQKILPDDPDKKPOAKQLOTRADYLIKLNLDRALARQRLAG  
YGYGSWEMIKMDPDLSTQKILPDDPDKKPOAKQLOTRADYLIKLNLDRALARQRLAG  
YGYGSWEMIKMDPDLSTQKILPDDPDKKPOAKQLOTRADYLIKLNLDRALARQRLAG  
\*\*\*\*\*

C CBD-W  
C CBD-1A  
M CBD-1

AGNSKRRKTRSKRKKKATKAA  
AGNSKRRKTRAKSKAMKSIVKREEIKSDSSPLPSEKSDDEDD---KLNDSPKESKDRS  
AGNSKRRKTRKKKK-MKASKIKEIKSDSPQPSKSDDEDDDEEDNKVNEMKSENKEKS  
\*\*\*\*\*

C CBD-1A  
M CBD-1

KKSVVSDAPVBITASGPVPIAESEZELDKTFISICKMRPVKAALKQDLRPEKGLSER  
KKIPLLDTPVBITATSEPKVPIESEZELDKTFISICKMRPVKAALKQDLRPEKGLSER  
\*\*\*\*\*

C CBD-1A  
M CBD-1

EQLEHTROCLIKIGDHITECLKEYSNPEQIKQWRKLNWIFVSKTFDARKLEKLYKHA  
EQLLEHTROCLIKIGDHITECLKEYTNPEQIKQWRKLNWIFVSKTFDARKLEKLYKHA  
\*\*\*\*\*

C CBD-1A  
M CBD-1

KKQDESOQNSDON-SNVATTHEVIRNPDMERLKENTNEDSSRDSYSSDRHLSQYHDEHED  
KKQDESOQHNDONISSNVNTHVIRNPDMERLKENTNEDSSRDSYSSDRHLSQYHDEHED  
\*\*\*\*\*

C CBD-1A  
M CBD-1

REQGDSYKSDSRKRPYSSPSNGKDREWDHYRQDSRYYSDREKRLDDRSREHRSLS  
REQGDAYKSDSRKRPYSAPSNGKDREWDHYRQDSRYYSDS-KERKRLDDRSRDRSLS  
\*\*\*\*\*

C CBD-1A  
M CBD-1

EGGLKD-RCHSDRS  
EGNLKDSDRS  
\*\*\*\*\*

C CBD-1A  
M CBD-1

LDQSPYGSRSRSP-----FEHSAEHRSTPBTWSSRKTQKLMSSLSSGTLXP  
LDQSPYGSRSRSPLGHSRSPPEHSSDRKSTPBTWSSRKTQKLMSSLSSGTLXP  
\*\*\*\*\*

C CBD-1A  
C CBD-1A  
C CBD-1A  
C CBD-1A  
C CBD-1A  
C CBD-1A  
C CBD-1A

LTXLERYGLDILSVAVLILSRMOGLLSQQQKNIIFVFKVYALCCKCCGTFPLRNRCRLL  
LQGPQBCPPQGSSYKTLLEVKKVLGXTQIKLCLXMMNTXTLTCAYVSGKNGCPILFYPFLV  
NSCGLCSLSKATCLBCTLRPPCRFSSQAXIFKFCCTYSCKLARISPVCDQLXCLPMKQTNK  
QTKIKKNTTKPTNOCKLLIXMSFFPSGFWLFLSPPTQAPPQSQYTYMPXDNISKE  
SECKNGEZNILPELVLLPYWILLTCFWLFTYFIPPPYXTVSVVIVVANSENIPLXTVFWK  
AFQVHMFRRKCSIGZBFTQISQDSLXILHPSLNMGNVKCAGQQLIPXXIXMTLLTE  
LLOCTLIVRXLSDKLNXLICPKT

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Figure 10.

55 KPPKADGSEFWKSSPSILAVQRSAVLKKQQQQQKAASSDSGSEEDSSSSE 104 (SEQ ID NO: 20)  
2654 MAAKDISTEVLQN.PELYGLRRS...HRAAAHQQNYFNDSDDDED...E 2695 (SEQ ID NO: 21)  
105 DSADDSSSETKKKHKDEDWQMSGSGSVSGSDSESAEDGDKSSCEESE 154  
2696 DNIKQSRKRMTTIEDDED.....EFEDEEGEEDSGEDEDEEDFEEDD 2738  
155 SDYEPKNKVKSRSRPPSRIKPKGKSTGQKKRQLDSSEEEDDEDYDKR 204  
2739 DYYGSPIKQNRSKPKSRTKS SKSKPKSQSEKQSTVHIP.....TRF 2780  
205 GSRRQATVNVSYKEAEETKTDSDLLE...VCGEDVPQT....EEDEFE 246  
2781 SNRQNKTVNYYNIDYSDDLLESEDDYGESEALSEENVHEASANPQPEDFH 2830  
247 TIEKFMDSRIGRKATGASTTIYAVEADGDPNAGFEKSKELGEIQYLIKW 296  
2831 GIDIVINERL.....KTSLEEGKVLEKTVPDLNCKE..NYEFLIKW 2870  
297 KGWSHIBNTWETEETLQKQNVGMNKLDNYKKK...DQETKRWLKNASPE 343  
2871 TDESHLBNTWETYESIGQ..VRGLKRLDNYCKQFIIEDQQVRLDPYVTAE 2918  
344 DVEYYNCQQELTDDLHKQYQIVERIIA..HSNQKSAAGYPDYYCKWQGLP 391  
2919 DIEIMDMERERRLDEFEEFHVPERIIDSQRASLEDGTSQQLVWKWRRLN 2968  
392 YSEC SWEDGALIAKKFQARIDEYFSRNQSKTPFKDCKVLQPRFVALK 441  
2969 YDEATWENATDIVKLAPEQVKBFQNRRENSKILPOYSSNYTSQRPRFEKLS 3018  
442 KQPSYIGGHESLERDYQLNGLNWLHWSCKGNSCI LADEMGLGKTIQTI 491  
3019 VQPPFIKGG...ELRDFQLTGINWMAFLWSKGDNGLADEMGLGKTVQTV 3065  
492 SFLNYLFHEHQLYGPFLRVLSTLTSWQREIQTWAQMNNAVYLGDIS 541  
3066 AFISWLIFARRQNGPHIIVVPLSTMPAWLDTFEKWPADLNCICYMGNQKS 3115  
542 RNMIRTHEW....MEPQTKRLKFNFNILLTYEILLKDKSPLGGLNWAFIGV 587  
3116 RDTIREYEFTNPRAKGKTMKFNVLLTYEYILKDRALGSIKWQFMAV 3165  
588 DEAHLRKNDSSLLYRTLIDFKSNHRLLITGTPQLQNSLKEWLSSLLHFIMPE 637  
3166 DEAHLRKNAESSLYESLNSFKVANRMLITGTPQLQNNIKEALAALVNPLMPG 3215  
638 KFSSWEDFE.EEHGKGREYGYASLHKELEPFLRRVKKDVEKSLPAKVEQ 686  
3216 RFTIDQEIDFENQDEEQEEYIHDLHRRIQPFFILRRLKDVKSLSKTER 3265  
687 ILRMEMSALQKQYYKWLTRNYKALSKGSKGSTSGPLNIMMELKKCCNHC 736  
3266 ILRVELSDVQTEYYKNILTKNYSALTAGAKGGEFSLLNIMNELLKASNBP 3315  
737 YLIKPPDDNEF.....YNKQEALQBLIRSSGKLILLDKLLIRLRERGN 779  
3316 YLPDNAEERVLQKFGDGKMTRENVLRLGLIMSSGKVMLLDQLLTRLKKDGB 3365



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780 RVLIFSQMVRMLDILAEYLKYRQFFQRLDGSIKGELRKQALDFNAEGS 829  
3366 RVLIFSQMVRMLDILGDYLSIKGINFQRLDGTVPSAQRRISIDHFNSPDS 3415  
830 EDFCFLLSTRAGGLGINLASADTVVIFDSDWNPQNDLQAQARAHRIQKK 879  
3416 NDFVFLLSTRAGGLGINLMTADTVVIFDSDWNPQADLQAMARAHRIQKN 3465  
880 QVNIIYRLVTGKSVVEEDILERAKKMKVLDLVIQRMDDTGTVLBTGSTPS 929  
3466 BVMVYRLVSKDTVEEEVLERARKMILEYAIISLGVTDGNKYTKKNEP.. 3513  
930 SSTPFNKEELSAILKFGAEELFKEPEGEEQEPQEMDIDEILKRAETRENE 979  
3514 ....NAGELSAILKFGAGNMFTATD.NQKKLEDLNLDVLNHAEDHVT 3557  
980 PG...PLTVGDELLSQFKVANFSNMEDDIELEPERNSRNWEIIPESQR 1026  
3558 PDLGESHLGEEFLKQFEVTDY.....KADIDWDDIPEEEL 3594  
1027 RRIEEERQKELEE.....IYMLPRMRNCAKQI..SFNGSE..... 1060  
3595 KKLQDDEQRRKDEEYVKEQLEMMNRRDNALKKIKNSVNGDTAANSDSDD 3644  
1061 ..GRRRSRSRYSGSDSITERKPKRGRPRTIPIR.ENIKGFS...AE 1104  
3645 DSTSRSSRRRARANDMDSIGZ...SEVRALYKAILKFGNLKEILDELIAD 3691  
1105 IRRPIKSYKRGPGPLERLDAVARDA.....ELVDKSETDLRRLGEL 1145  
3692 GTLPVKSFETYGETYDEMMEAACKDCVHEEEKNRKEILEKLEKHATYRAK 3741  
1146 VHNGCIKALKD.NSSGQERAGGRGLGVKGPTFRISGVQ.VNAKLVISHEE 1193  
3742 LRSGEIKAENQPKDNPLTRLSLKREKKAVLFNFKGVKSLNAESLLSRVE 3791  
1194 ELAPLHKSIIPSD.PEERKRYVIPCETKAA..BFDIDWGKEDDSNLLVGIY 1240  
3792 DLKYLKNLINSNYKDDPLKFSLGNNTPKPVQNWNSSNWTKEEDEKLIGVF 3841  
1241 EYGYGSWEMIKMDPDLSTQKILPDD..... 1266  
3842 KYGYGSWTQIRDDPFLGITDKIFLNEVHNPVAKSASSSDTTPSKKGK 3891  
1267 ....PDKRPQAKQLQTRADYLKLLNKDLARK.....EAQRLAGAGNS 1305  
3892 GITGSSKKVPGAIHLGRRVDYLLSFLRGGLNTSPSADIGSKKLPTGPSK 3941  
1306 KRRKTRNKKNMKASKIKEEIKSDSSPQPKSEKSDDEE..EDNKVNEM 1352  
3942 KRQRKPNBKSMTPEITSSEPANGPPSKRMKALPKGPAALINNTRLSPN 3991  
1353 KSENKEKSKKIPLLDTPVHITATSEPVPISEEESEELHQKTFSVCKERMRP 1402  
3992 SPTPPLKSKVSRDNGTR....QSSNPSSSGSAHKEYDSMDEEDCRHMSA 4037  
1403 VKAALKQLDRPEKGLSEREQUEHTRQCLIKIGDHITECLKEYTNPEQIKQ 1452  
4038 IRTSLKRLRGGKSLDRKEWAKILKTELTTIGNBI.ESQKGSSRKASPEK 4086  
1453 WRKNLWIFVSKP..TEFDARKLHKLKYKHAIKRQESQQ 1488  
4087 YRKEWLWSYSANFWPADVKSTKLMAMY....DKITESQK 4120



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Figure 11.

CCHD	AVEAD	GDPNAGFEKSKELGE.IQYLIKWKGSHEINTWETEET	LKQQNVGMNKLNDNYKK (SEQ ID NO: 22)
MCHD	AVEAD	GDPNAGFERNKEPGD.IQYLIKWKGSHEINTWETEET	LKQQNVRGNKLDNYKK (SEQ ID NO: 23)
YCHD	EGKVL	EKTVPDLNNE..N.YEFLIKWTDESHLNTWETYES	IGQ..VRGLKRLDNYCK (SEQ ID NO: 24)
***			
DBP1	EEEEEE	YAVEKIIIDRRVRKGK.VEYYLKWKGYPETENTWEPEENN	LDCQDLIQQY (SEQ ID NO: 25)
BEP1	EDEEE	YVVEKVLDRVVVKGKQVEYLLKWKGFSSEEENTWEPEKN	LDCPELISEF (SEQ ID NO: 26)
MMOD1	EEEEEE	YVVEKVLDRVVVKGK.VEYLLWKGSDEDNTWEPEEN	LDCPDLIAEF (SEQ ID NO: 27)
MMOD2	AEPEE	FVVEKVLDRVVNGK.VEYFLWKGFTDADNTWEPEEN	LDCPELIEDF (SEQ ID NO: 28)
***			
DPC	PVDLV	YAAEKIIQKRVKKGV.VEYRVWKGNQRYNTWEPEENN	ILDRRLIDIY (SEQ ID NO: 29)
MMOD3	VGEQV	FAAECILSKRLRKKGK.LEYLVWKRGWSSKENSWEPEEN	ILDPRLLLAF (SEQ ID NO: 30)
***			



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Figure 14.

MOUSE	CHD1	AGA TAT TCT GGA TCT GAT AGT GAT TCA ATC TCG GAA	(SEQ ID NO: 31)
CHICKEN	CHD-1A	--- --- --- --- --- --- C --- C --- A-A ---	(SEQ ID NO: 32)
SPIX	CHD-1A	C --- C --- --- ---	(SEQ ID NO: 33)
CHICKEN	CHD-W	--- --- --- --- --- --- C --- --- A ---	(SEQ ID NO: 34)
SPIX	CHD-W	C --- C --- --- A ---	(SEQ ID NO: 35)
HYACINTH	CHD-W	--- --- --- --- --- C --- C --- --- A ---	(SEQ ID NO: 36)
P1		A TAT TCT GGA TCT GAT AGT GAY TC	(SEQ ID NO: 37)
P3		AGA TAT TCC GGA TCT GAT AGT GA	(SEQ ID NO: 38)
MOUSE	CHD1	AGG AAA CGG CGG AAG AAA CGT GGG CGA CCC CGC ACT	
CHICKEN	CHD-1A	--A --- --- A --- A --- G --- --A A --- --T --A --C	
SPIX	CHD-1A	--- --- --- A --- A --- G --- --A A --- --A --- A ---	
CHICKEN	CHD-W	--A --- --- A --- A --- A --- --- A --- --A --- A ---	
SPIX	CHD-W	--A --- --- A --- A --- GA --- --- A --- --A --- A ---	
HYACINTH	CHD-W	--A --- --- A --- A --- GA --- --- --A --- --A --- A ---	
MOUSE	CHD1	ATC CCT CGG GAG AAT ATT AAA GGA TTT AGT GAT GCG GAG	
CHICKEN	CHD-1A	--T --- --A --- A --- --- --- --- --- --- A ---	
SPIX	CHD-1A	--T --- --A --- A --- --- --- A	
CHICKEN	CHD-W	--T --- C --- T --- A --- C --- --- --- --- --- A ---	
SPIX	CHD-W	--T --- --T --- A --- --- --- --- --- --- --- A ---	
P2		TTT CCT AAA TCG CTA CGT CT (SEQ ID NO: 39)	
HYACINTH	CHD-W	---	
HYACINTH	CHD-W	ATT AGG CGG T	